

<b>Product</b>	Datalog30 & nSens			<b>novasina</b> The Art of Precision Measurement
<b>Document</b>	Manual - installation & configuration of external probes			Novasina AG CH-8853 Lachen
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## Datalog30 with External Probes




### IMPORTANT:

**The display has to show *REC*** for the logger to record data. If *STOP* is displayed, measurements are done without recording!

**External supply is required** for the use of external sensors (230V USB adapter or 24VDC).

The date and time have to be up-to-date.

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## Scope of Use:

This user guide applies to the Datalog30 data logger from firmware release V3.5 and Smartgraph3 V3.3.3 on.

The Datalog30 user guide and the SmartGraph3 online help should be consulted for more details.

## 1. Installation of SmartGraph3

You will be able to set up your data logger and take the readings of recorded measurements if you install the SmartGraph software on a PC with the following minimum requirements.

Supported operating systems:

- Windows XP from Service Pack 3 on and higher Windows releases (32+64bit)

Hardware requirements:

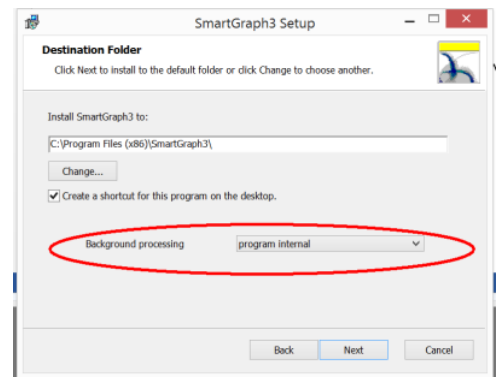
- Processor speed: at least 1 GHz
- USB or network connection: RJ45
- at least 512 MB of operating memory
- at least 4 GB of free disc space
- Software Adobe Acrobat Reader

You can select during the installation of SmartGraph3 how Background Processing is to be installed:

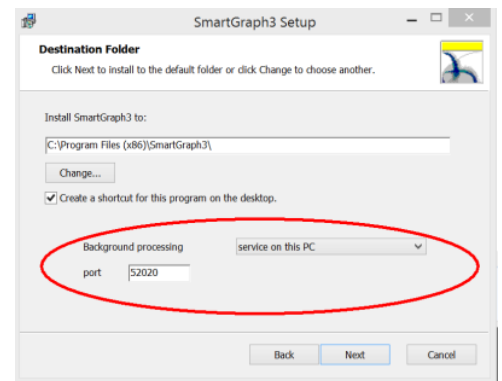
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The following options are then available:

- **program internal** (default setting): background processing is integrated into the program, i.e. it works like a single/normal program. Processing is done in the background only if the user interface is also started.

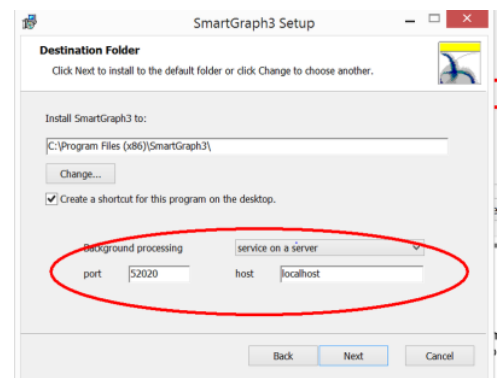


- **service on this PC**: background processing is installed, independently of the user interface, on the local PC as a separate service, i.e. processing is done in the background regardless of the user interface. Background processing is initiated once the operating system is started and operates whether the user is logged on the PC or not.



- **service on a server**: background processing takes place on another PC/server. To use this function, you have to first install SmartGraph3 on this PC/server with the option *Background processing = service on this PC*.

Instead of *localhost* (which would mean the local PC), the server's IP address or name is entered here.



**Note:** Please note that in this case communication with devices connected via USB is also available only over the server, i.e. no devices connected to the client PC via USB are recognised by the software anymore.

In principle, the server can be accessed by multiple client PCs.

If the installation mode is changed, SmartGraph3 has to be uninstalled and installed once again, but this does not affect any of the saved measurements or settings.

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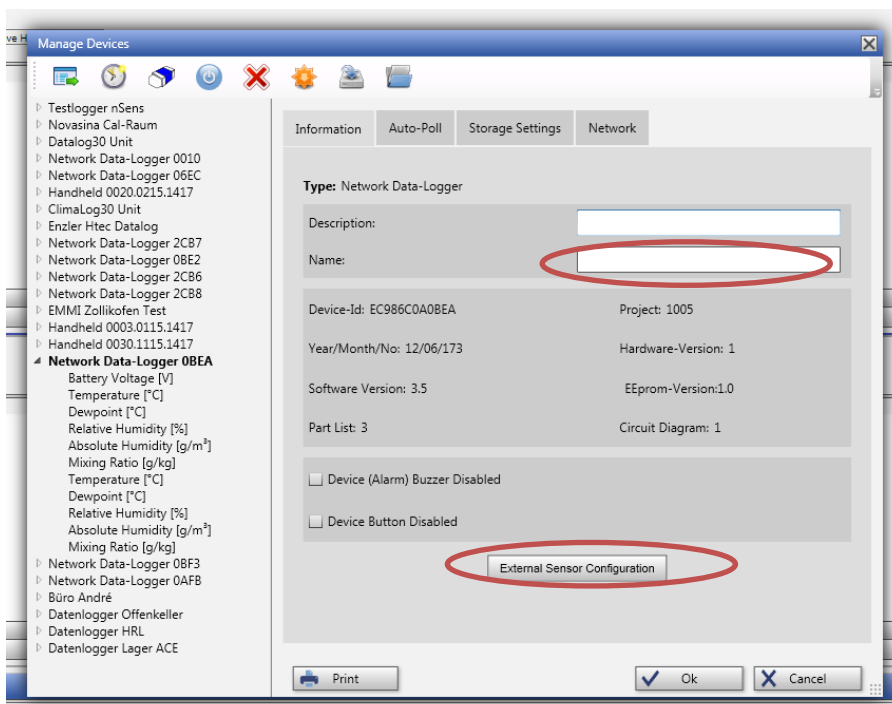
## 2. Installation and Set-Up of the DataLog30

Before the first set-up the DataLog30 has to be connected via USB directly to a PC with installed Smartgraph3 software.

No additional drivers are required. The logger is automatically recognised and displayed in Smartgraph3. By default, the name reads *Network Datalogger XXXX*, with XXXX standing for the four last characters of the MAC address (you can see the whole MAC address on the data logger's nameplate on the backside).

## 3. Set-Up: nSens-HT Digital Sensors

Menu: *Devices - Manage Devices*



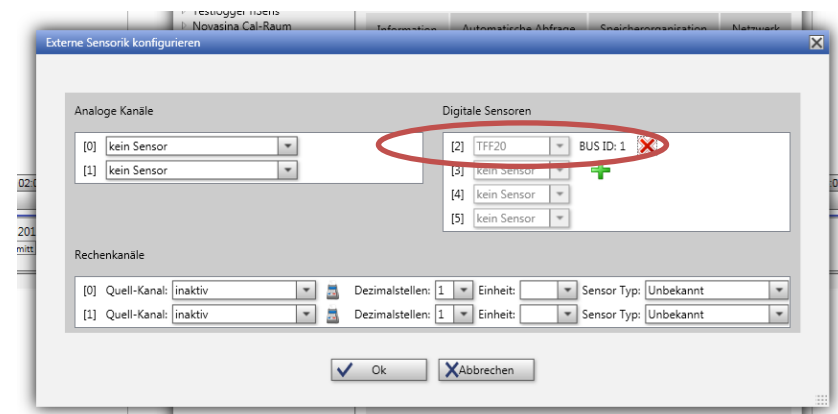
**Name:** Freely selectable designation to replace the standard name *Network Datalogger XXXX* in the device list.

Device ID: data logger's MAC address

**External Sensor configuration button**

Opens the set-up window for external sensors.

Click on *External Sensor configuration*



### Digital Sensors

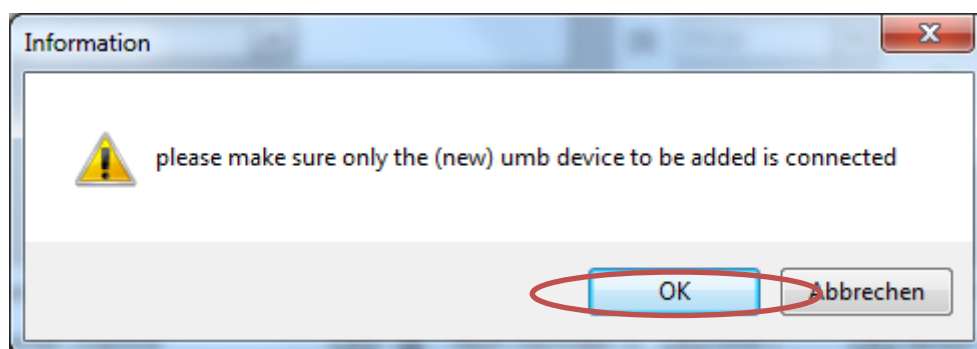
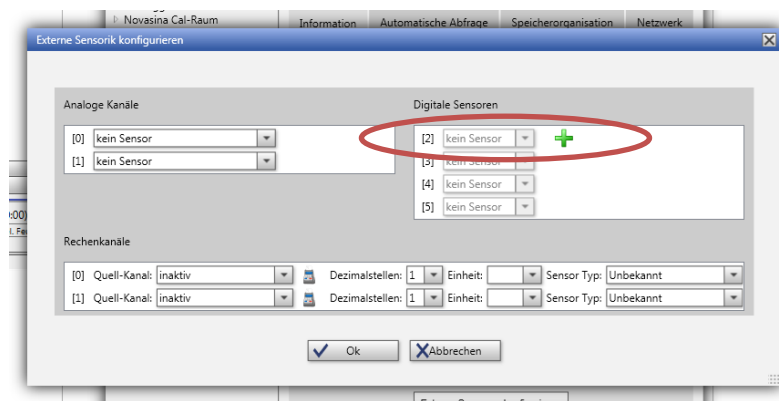
If the sensors are already set up, they should first be removed by clicking on the red X

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**IMPORTANT: Remove from the data logger all digital sensors, including the adapter (nLink UMB).**



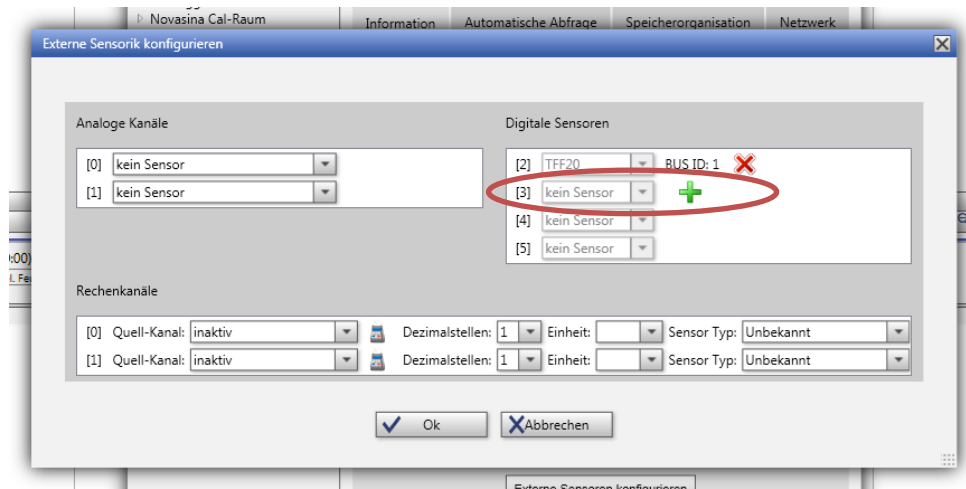
Connect the first sensor with the nLink-UMB adapter to the Datalog30. Only one adapter is allowed, and it does not matter if it is connected directly, via a cable or T-piece.



Once the procedure is successfully completed, it is recommended to label the UMB adapter with number 1. The DataLog30 identified the UMB adapter. The sensor attached to the adapter can at any time be exchanged.

In case the procedure is interrupted, remove the sensor, including the UMB Adapter. Switch off the logger (remove the USB cable and batteries), then try once again.

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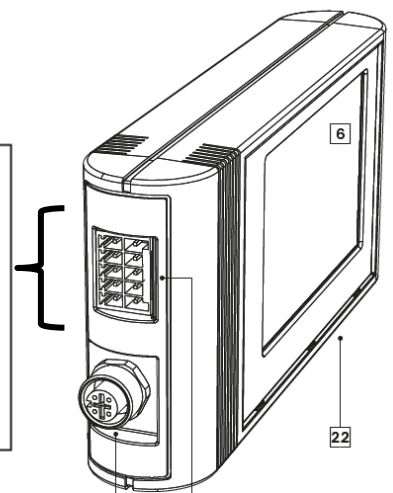
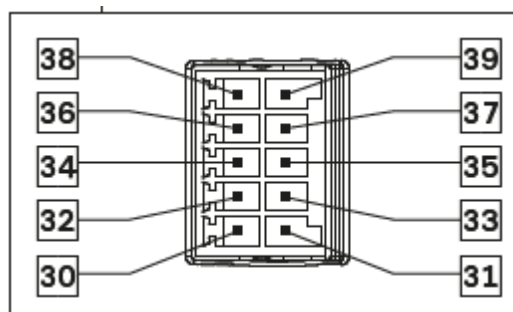
For multiple sensors, please remove each attached sensor from the data logger and connect only a new sensor to the UMB adapter. Repeat the procedure.

**IMPORTANT:** The nLink UMB adapter is identified by the data logger and provided with an ID. You can attach any nSens-HT onto the adapter without having to set it up again. If the UMB adapter is to be replaced, it has to be set up once again.

#### 4. Connection of Analogue Sensors Using mA or V

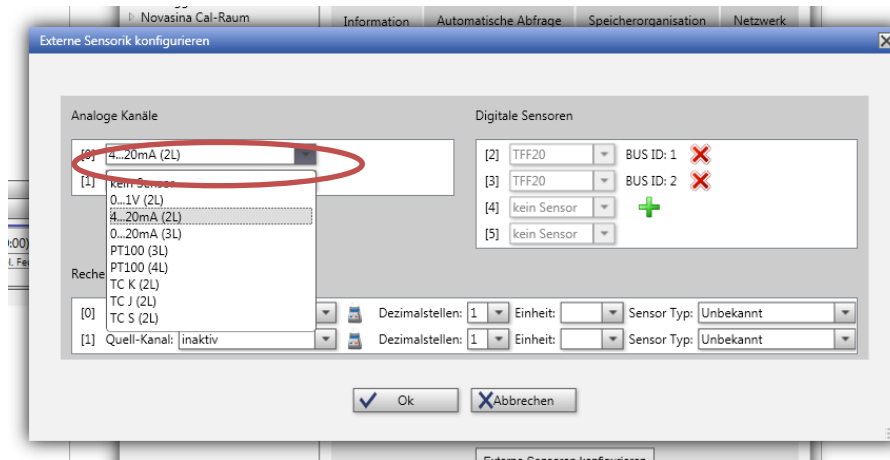
Two analogue signals (mA/V or PT100 temperature sensors) can be connected to the digital sensor at the same time.

- Pin 30: 24VDC+
- Pin 31: GND
- Pin 36: Analogue 1
- Pin 32: Analogue 2



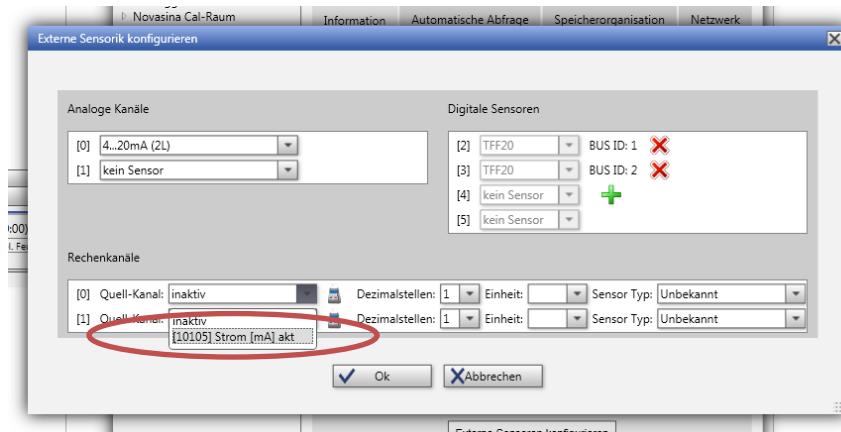
The logger is supplied with 24V over pin 30. The battery serves only as a backup.

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**Analogue channels**  
Define analogue channels [0] and [1].

Adjust the scaling



**Calculation channels**  
**Adjust the source channel**

This symbol opens the parameterisation.



The 4 and 20mA values have to match the sensor transmitter.

Example: pressure sensor

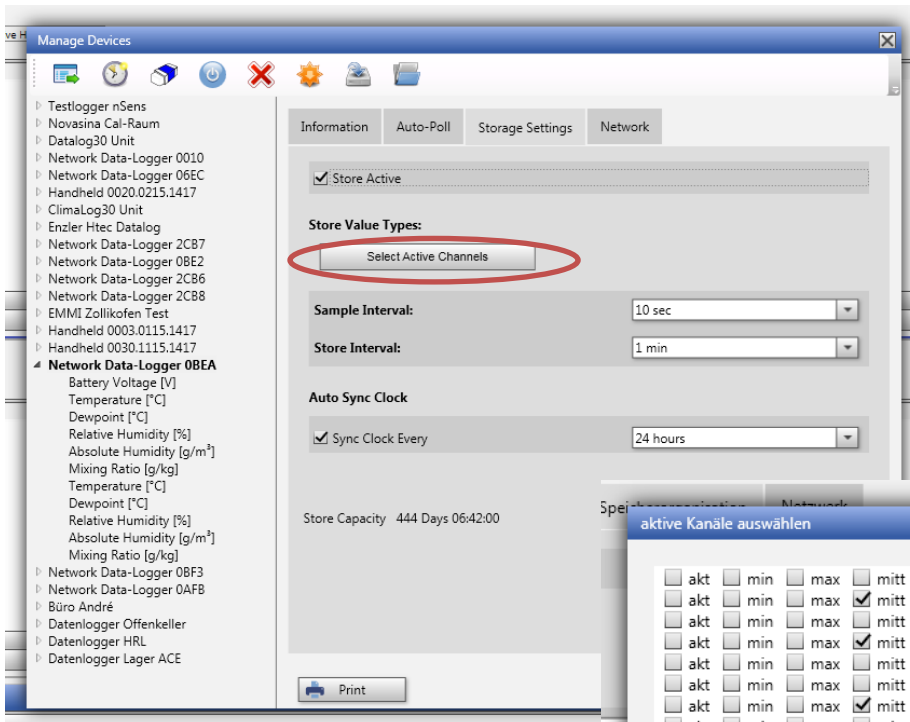
Source channel min (4mA) = 0 Pa  
Source channel max (20mA) = 100 Pa

Confirm with OK.



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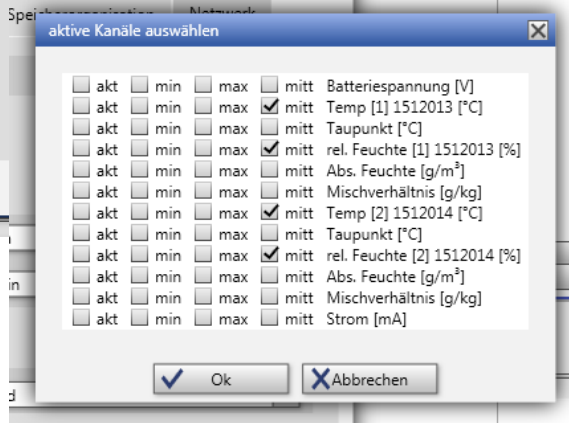
## 5. Storage Settings



**The recording function has to be activated!**

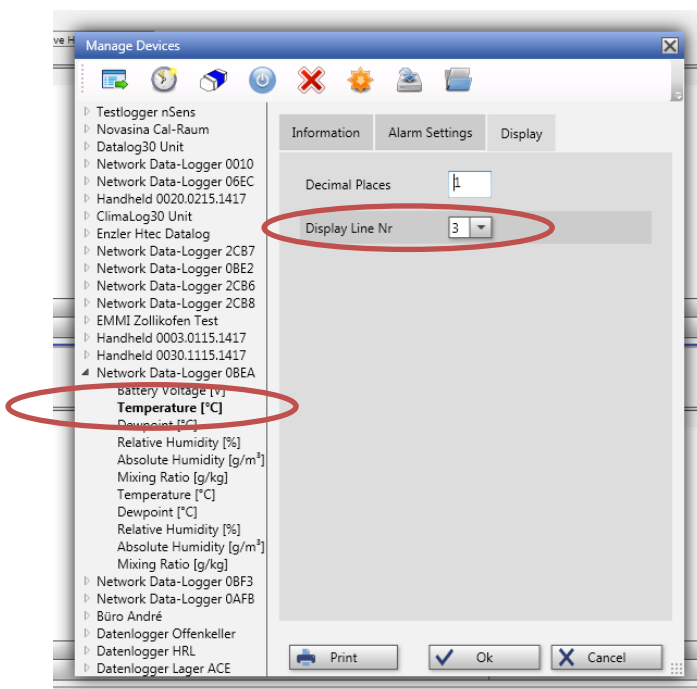
Press the *Select active Channel* button.

The act/min/max/avg indications refer to measurement and recording rates. In this example the logger makes a measurement every minute and saves the mean value every 10 minutes.



## 6. Data Logger Display

The Datalog30 can display three measurements (channels) on the LCD display



**Select the desired channel on the left. (click on temperature on the left side)**

Register **information**: edit the channel name.

Register **display**: select decimal places and display line (1-3).



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## 7. DataLog30 Spare Parts and Accessories

### DataLog30 Data Logger:

Article number	260 0868
Display	3-line LCD with the status indications: alarm, date and time
Dimensions	166*78*32mm, 250g
Power supply	USB, 24VDC or 4xAA LR6 batteries
Operating temperature	-20 to +50°C, 0 to 95%rF (non-condensing)
Interfaces	USB, LAN (Ethernet TCP/IP, DHCP managed), UMB Bus
Memory	3.2m data points adjustable measurement and recording intervals



### nSens-HT-ENS Humidity and Temperature Measurement Unit

Article number	260 1171
Measurement range	humidity temperature
	0 to 100% rF -20 to +80°C
Measurement accuracy	humidity temperature
	<b>± 0.5% RH</b> <b>±0.1K</b>
Operating temperature	-20 to +80°C



### nSens-T-NBS Temperature Measurement Unit

Article number	260 1172
Temperature measurement range	-20 to +80°C
Temperature measurement accuracy	<b>±0.1K</b>
Operating temperature	-20 to +80°C



### Adapter nLink UMB (to Connect a nSens to the Data Logger)

Article number	260 1063
	Each nSens sensor has to be connected to the Datalog30 via this adapter



### Data Cable and Connectors

M12/4P sensor cable	3m (260 1276) 10m (260 1198) variable (on request)
M12 T-piece	260 1282
M12 T-piece	260 1281

